STIC EIC 2100 Search Request Form

119386

47

Today's Date: 4/14/04

What date would you like to use to limit the search?

Priority Date: 10/31/00 Other:

Name Allen Wu

AU 2135 Examiner # 80045

Room # 4D17 Phone 305-0708

Serial # 09/704186

Format for Search Results (Circle One):

PAPER DISK EMAIL

Where have you searched so far?

USP DWPI EPO JPO ACM IBM TDB

IEEE INSPEC SPI Other _____

Is this a "Fast & Focused" Search Request? (Circle One) YES NO

A "Fast & Focused" Search is completed in 2-3 hours (maximum). The search must be on a very specific topic and meet certain criteria. The criteria are posted in EIC2100 and on the EIC2100 NPL Web Page at http://ptoweb/patents/stic/stic-tc2100.htm.

What is the topic, novelty, motivation, utility, or other specific details defining the desired focus of this search? Please include the concepts, synonyms, keywords, acronyms, definitions, strategies, and anything else that helps to describe the topic. Please attach a copy of the abstract, background, brief summary, pertinent claims and any citations of relevant art you have found.

Means of searching of finding a match of values or objects in the fastest way possible and using the least amount of memory through the use of sub hashes.

Input is used to generate a hash key which is divided into parts. Each part of the key is used to index into sub-hashes to obtain a value. Each of the values are ~~used to~~ Combined to create the result of a hash

STIC Searcher David Holloway Phone 308-7794

Date picked up 4-14-04 Date Completed 4-14-04

sira Search and Information Resources Administration

DIALOG 45 min

535 14

```
Set     Items   Description
S1        313   (MULTIPL? OR PLURAL? OR SEVERAL? OR TWO OR 2 OR SECOND OR -
            ADDITIONAL OR 2ND)(N)HASH? OR SUBHASH?
S2    9551742   SEARCH? OR FIND? OR LOCAT? OR QUERY OR QUERIES OR MATCH? OR
            COMPAR?
S3    4138962   COMBIN? OR RECOMBIN? OR ASSEMBL? OR JOIN?
S4    1842482   DIVID? OR SPLIT? OR PARTIAL?
S5      21696   HASH? OR SUB()HASH?
S6       3871   (S3 OR S4) AND S5
S7       2058   (S1 OR S6) AND S2
S8         45   S1 AND S2 AND (S3 OR S4)
S9        695   (S3 OR S4)(4N)S5 AND S2
S10         4   S1 AND S2 AND S3 AND S4
S11        25   S1 AND S9
S12        45   S8 OR S10 OR S11
S13        33   RD (unique items)
S14        30   S13 NOT PY>2000
S15        30   S14 NOT PD=20001031:20021031
S16        30   S15 NOT PD=20021031:20040401
File   8:Ei Compendex(R) 1970-2004/Apr W1
         (c) 2004 Elsevier Eng.  Info. Inc.
File  35:Dissertation Abs Online 1861-2004/Mar
         (c) 2004 ProQuest Info&Learning
File  65:Inside Conferences 1993-2004/Apr W2
         (c) 2004 BLDSC all rts. reserv.
File   2:INSPEC 1969-2004/Apr W1
         (c) 2004 Institution of Electrical Engineers
File  94:JICST-EPlus 1985-2004/Mar W4
         (c)2004 Japan Science and Tech Corp(JST)
File 111:TGG Natl.Newspaper Index(SM) 1979-2004/Apr 14
         (c) 2004 The Gale Group
File 233:Internet & Personal Comp. Abs. 1981-2003/Sep
         (c) 2003 EBSCO Pub.
File 144:Pascal 1973-2004/Apr W1
         (c) 2004 INIST/CNRS
File  34:SciSearch(R) Cited Ref Sci 1990-2004/Apr W1
         (c) 2004 Inst for Sci Info
File  62:SPIN(R) 1975-2004/Feb W4
         (c) 2004 American Institute of Physics
File  99:Wilson Appl. Sci & Tech Abs 1983-2004/Mar
         (c) 2004 The HW Wilson Co.
```

16/5/1 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

04248603 E.I. No: EIP95092856146
Title: Applying segmented right-deep trees to pipelining multiple hash joins
Author: Chen, Ming-Syan; Lo, Mingling; Yu, Philip S.; Young, Honesty C.
Corporate Source: IBM T.J. Watson Research Cent, Yorktown, NY, USA
Source: IEEE Transactions on Knowledge and Data Engineering v 7 n 4 Aug 1995. p 656-668
Publication Year: 1995
CODEN: ITKEEH ISSN: 1041-4347
Language: English
Document Type: JA; (Journal Article) Treatment: A; (Applications)
Journal Announcement: 9511W2
Abstract: The pipelined execution of multijoin **queries** in a multiprocessor-based database system is explored in this paper. Using **hash** -based **joins** , multiple **joins** can be pipelined so that the early results from a **join** , before the whole **join** is completed, are sent to the next **join** for processing. The execution of a **query** is usually denoted by a **query** execution tree. To improve the execution of pipelined **hash joins** , an innovative approach on **query** execution tree selection is proposed to exploit segmented right-deep trees, which are bushy trees of right-deep subtrees. We first derive an analytical model for the execution of a pipeline segment, and then, in light of the model, develop heuristic schemes to determine the **query** execution plan based on a segmented right-deep tree so that the **query** can be efficiently executed. As shown by our simulation, the proposed approach, without incurring additional overhead on plan execution, possesses more flexibility in **query** plan generation, and can lead to **query** plans of better performance than those achievable by the previous schemes using right-deep trees. (Author abstract) 45 Refs.
Descriptors: **Query** languages; Database systems; Pipeline processing systems; Parallel processing systems; Trees (mathematics); Mathematical models; Heuristic methods; Computer simulation
Identifiers: Multiprocessor based database system; **Query** plan generation; Parallel **query** processing; Bushy trees; Right deep trees; **Hash joins**
Classification Codes:
723.3 (Database Systems); 722.4 (Digital Computers & Systems); 921.4 (Combinatorial Mathematics, Includes Graph Theory, Set Theory); 921.6 (Numerical Methods); 723.5 (Computer Applications)
723 (Computer Software); 722 (Computer Hardware); 921 (Applied Mathematics)
72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS

16/5/3 (Item 3 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

02755519 E.I. Monthly No: EI8907059966
Title: Self-adjusting and split **sequence** hash **tables.**
Author: Wogulis, James
Corporate Source: Univ of California, Irvine, CA, USA
Source: Information Processing Letters v 30 n 4 Feb 27 1989 p 185-188
Publication Year: 1989
CODEN: IFPLAT ISSN: 0020-0190
Language: English
Document Type: JA; (Journal Article) Treatment: T; (Theoretical)
Journal Announcement: 8907
Abstract: The author proposes a **combination** of **two hashing** techniques: **split** sequence **hash search** and self-adjusting **hash** tables. **Split** sequence **search** is applicable to chaining, and open addressing hashing. Self-adjusting hash tables are intended for use when the keys to be found do not occur in a random distribution (i.e. for a hash table of size N, each table **location** has the probability P equals 1/N of being requested), but rather when certain keys are looked up more frequently than others. The author demonstrates how the two methods can be **combined** , and provides some experimental data **comparing** these different methods. 7 Refs.
Descriptors: *DATA PROCESSING--*File Organization; COMPUTER PROGRAMMING--Algorithms
Identifiers: SELF ADJUSTING **HASH** TABLES; **SPLIT** SEQUENCE **HASH SEARCH** ; CHAINING; OPEN ADDRESSING
Classification Codes:
723 (Computer Software)
72 (COMPUTERS & DATA PROCESSING)

16/5/23 (Item 16 from file: 2)
DIALOG(R)File 2:INSPEC

03181625 INSPEC Abstract Number: C88046759
Title: Join **strategies using data space partitioning**
Author(s): Ozkarahan, E.A.; Bozsahin, C.H.
Author Affiliation: Dept. of Comput. Sci., Arizona State Univ., Tempe, AZ, USA
Journal: New Generation Computing vol.6, no.1 p.19-39
Publication Date: 1988 Country of Publication: Japan
CODEN: NGCOE5 ISSN: 0288-3635
Language: English Document Type: Journal Paper (JP)
Treatment: Practical (P)
Abstract: In the recent investigations of reducing the relational **join** operation complexity **several** **hash** -based partitioned- **join** strategies have been introduced. All of these strategies depend upon the costly operation of data space partitioning before the **join** can be carried out. The authors had previously introduced a partitioned- **join** based on a dynamic and order preserving multidimensional data organization called DYOP. The study extends the earlier research on DYOP and constructs a simulation model. The simulation studies on DYOP and subsequent **comparisons** of all the partitioned- **join** methodologies including DYOP have proven that space utilization of DYOP improves with the increasing number of attributes. Furthermore, the DYOP based **join** outperforms all the **hash** -based methodologies by greatly reducing the total I/O bandwidth required for the entire partitioned- **join** operation. (17 Refs)
Subfile: C
Descriptors: database theory; relational databases
Identifiers: data space partitioning; relational **join** operation complexity; **hash** -based partitioned- **join** strategies; order preserving multidimensional data organization; DYOP; simulation model; space utilization; attributes; I/O bandwidth
Class Codes: C4250 (Database theory); C6160D (Relational DBMS)

16/5/27 **(Item 2 from file: 94)**
DIALOG(R)File 94:JICST-EPlus

02055504 JICST ACCESSION NUMBER: 94A0361048 FILE SEGMENT: JICST-E
Screening by multiple open hashing for a Japanese information system.
NAKAMOTO KEN'ICHI (1); YAMAMOTO TAKEO (1); HASEBE KIGEN (1)
(1) Univ. of Library and Information Science
Joho Shori Gakkai Kenkyu Hokoku, 1994, VOL.94,NO.25(IS-48), PAGE.53-60, FIG.6, REF.10
JOURNAL NUMBER: Z0031BAO ISSN NO: 0919-6072
UNIVERSAL DECIMAL CLASSIFICATION: 002.5:005
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication
ABSTRACT: A Japanese language retrieval capability is incorporated in WAIS (Wide Area Information Server) through the use of **multiple - hash** screening technique. Here, the hash table is constructed by hashing each dictionary entry with a number of mutually independent hash functions. Whether the **search** key fits with a dictionary entry is judged solely from the hash table, without accessing the original dictionary. As the hash table consists only of single-bit flags, it is much smaller than the original dictionary. Consequently, it is possible to process both the Japanese text data and the **query** string based on the same dictionary, which can be changed from database to database. As many **combinations** of possible words in the text may be indexed, some variations in kana/kanji expressions may be tolerated in the retrieval. (author abst.)
DESCRIPTORS: information retrieval system; Japanese; hash function; hash coding; recall precision; index term; notation; morpheme; DBMS; distributed processing; letter; character string
BROADER DESCRIPTORS: information system; computer application system; system; oriental language; natural language; language; function(mathematics); mapping(mathematics); addressing; address system ; method; efficiency; vocabulary; treatment
CLASSIFICATION CODE(S): AC06020S

```
Set     Items   Description
S1       1003   (MULTIPL? OR PLURAL? OR SEVERAL? OR TWO OR 2 OR SECOND OR -
            ADDITIONAL OR 2ND)(N)HASH? OR SUBHASH?
S2    1807909   SEARCH? OR FIND? OR LOCAT? OR QUERY OR QUERIES OR MATCH? OR
            COMPAR?
S3    1136621   COMBIN? OR RECOMBIN? OR ASSEMBL? OR JOIN?
S4     729582   DIVID? OR SPLIT? OR PARTIAL?
S5      18595   HASH? OR SUB()HASH?
S6      14817   (S3 OR S4) AND S5
S7      14705   (S1 OR S6) AND S2
S8        769   S1 AND S2 AND (S3 OR S4)
S9       3699   (S1 OR S6)(4N)S2
S10      3681   S9 AND (S3 OR S4)
S11        22   S10 AND IC=(G06F-015/40)
S12        20   S11 NOT S8
S13        77   (SEPARAT? OR INTERATIV? OR REPEAT?)(N)S5
S14        39   S13 NOT (S12 OR S8)
S15         9   S1(10N)S2(8N)(S3 OR S4)
S16         0   S15 AND IC=G06F-015?
S17        68   S12 OR S14 OR S15
S18        35   S17 AND IC=(G06F-015? OR H04L? OR H04K?)
S19        24   S18 NOT AD>20001031
S20        24   IDPAT (sorted in duplicate/non-duplicate order)
S21        24   IDPAT (primary/non-duplicate records only)
File 348:EUROPEAN PATENTS 1978-2004/Apr W01
         (c) 2004 European Patent Office
File 349:PCT FULLTEXT 1979-2002/UB=20040408,UT=20040401
         (c) 2004 WIPO/Univentio
```

21/5,K/14 (Item 14 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00286895
IMPROVED PACKET FILTERING FOR DATA NETWORKS
NOUVEAU FILTRAGE PAR PAQUETS POUR RESEAUX DE DONNEES
Patent Applicant/Assignee:
GRAND JUNCTION NETWORKS INC,
Inventor(s):
HAUSMAN Richard J,
BIRENBAUM Lazar,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9505044 A1 19950216
Application: WO 94US8514 19940727 (PCT/WO US9408514)
Priority Application: US 93103659 19930809
Designated States: AU CA JP AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE
Main International Patent Class: **H04L-012/46**
Fulltext Availability:
Detailed Description
Claims
Fulltext Word Count: 6627

English Abstract
An improved partial packet filter (10) for filtering data packets (210) in a computer network (12) wherein a candidate field (413) of the data packet (210) is hashed to a plurality of bit-wise subsets (636) each being an independent representation of the candidate field (413). Each of the bit-wise subsets (636) is compared to a reference hash table (644) which has been prepared in a preliminary operation series (514). The preliminary operation series (512) configures a plurality of target fields (714) to set selected memory locations (312) in the reference hash table (644).

French Abstract
Nouveau filtre partiel (10) pour le filtrage de paquets de donnees (210) dans un reseau informatique (12), selon lequel un champ candidat (413) du paquet de donnees considerees (210) est hache en une serie de sous-ensembles a configuration binaire (636) dont chacun est une representation independante du champ candidat (413). Chacun des sous-ensembles a configuration binaire (636) est compare a une table de reference de hachage (644) elaboree dans le cadre d'une serie preliminaire d'operations (514). Cette serie preliminaire d'operations (512) configure une pluralite de champs cibles (714) permettant de definir certains emplacements de memoire (312) dans la table de reference de hachage (644).
Main International Patent Class: **H04L-012/46**
Fulltext Availability:
Detailed Description

Detailed Description
... hash table 310 (Fig. 3) stored in the target memory 16 (Fig. 1) in a **comparison** operation 618. The **combined multiple hash** values 636 may be considered to be a hash matrix 638 (in the example of...

```
Set     Items   Description
S1        110   (MULTIPL? OR PLURAL? OR SEVERAL? OR TWO OR 2 OR SECOND OR -
            ADDITIONAL OR 2ND)(N)HASH? OR SUBHASH?
S2    2104916   SEARCH? OR FIND? OR LOCAT? OR QUERY OR QUERIES OR MATCH? OR
            COMPAR?
S3    2123659   COMBIN? OR RECOMBIN? OR ASSEMBL? OR JOIN?
S4    1047697   DIVID? OR SPLIT? OR PARTIAL?
S5       3594   HASH? OR SUB()HASH?
S6        910   (S3 OR S4) AND S5
S7        363   (S1 OR S6) AND S2
S8          7   S1 AND S2 AND (S3 OR S4)
S9         98   (S1 OR S6)(4N)S2
S10        79   S9 AND (S3 OR S4)
S11         5   S10 AND IC=(G06F-015/40)
S12         5   S11 NOT S8
S13         6   (SEPARAT? OR INTERATIV? OR REPEAT?)(N)S5
S14         6   S13 NOT (S12 OR S8)
File 347:JAPIO Nov 1976-2003/Dec(Updated 040402)
         (c) 2004 JPO & JAPIO
File 350:Derwent WPIX 1963-2004/UD,UM &UP=200422
         (c) 2004  Thomson Derwent
```

12/5/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX

004573622
WPI Acc No: 1986-076966/198612
XRPX Acc No: N86-056331
Memory address search procedure - using search key defined by polynomial allowing verification via perfect hash function
Patent Assignee: BBC BROWN BOVERI & CIE AG (BROV)
Inventor: ZUGER S
Number of Countries: 008 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 174556	A	19860319	EP 85110862	A	19850829	198612	B
US 4897785	A	19900130	US 88208819	A	19880617	199012	
EP 174556	B	19900523				199021	
DE 3577938	G	19900628				199027	

Priority Applications (No Type Date): CH 844349 A 19840912
Cited Patents: 3.Jnl.Ref
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 174556	A	G	32		
	Designated States (Regional): CH DE FR GB LI NL SE				
EP 174556	B				
	Designated States (Regional): CH DE FR GB LI NL SE				

Abstract (Basic): EP 174556 B
A perfect hash functions for rapid verification is used. An entered search key corresponds to a key within an address table.
Each search key is defined by a polygram and the address table is **divided** into **partial** tables corresp. to polygram coeffts. with the same variables. The **hash** function for each **search** key is obtained from a hash function table, providing a recursive hash function of given form. Pref. the address table and the hash function table are held in a single associative memory.
ADVANTAGE - Cost effective search procedure in terms of hardware.
(32pp Dwg.No.0/7
Title Terms: MEMORY; ADDRESS; SEARCH; PROCEDURE; SEARCH; KEY; DEFINE; POLYNOMIAL; ALLOW; VERIFICATION; PERFECT; HASH; FUNCTION
Derwent Class: T01
International Patent Class (Additional): G06F-012/04; **G06F-015/40**
File Segment: EPI

14/5/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX

011344677 **Image available**
WPI Acc No: 1997-322582/199730
XRPX Acc No: N97-266945

Digital signature generation method authenticating group information - hashing information from each group to produce separate hash **key for each group, each key authenticating information in its respective group, combining keys to produce one combined hash key, and deriving digital signature from combined key**

Patent Assignee: GEN INSTR CORP DELAWARE (GENN); GEN INSTR CORP (GENN)
Inventor: CANDELORE B; MORONEY P; SPRUNK E
Number of Countries: 021 Number of Patents: 012
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 781003	A2	19970625	EP 96114510	A	19960911	199730	B
AU 9670430	A	19970626	AU 9670430	A	19961025	199734	
NO 9603626	A	19960830	NO 963626	A	19960830	199735	
JP 9200199	A	19970731	JP 96352487	A	19961213	199741	
CA 2184946	A	19970623	CA 2184946	A	19960906	199743	
MX 9606091	A1	19970601	MX 966091	A	19961204	199825	
US 5754659	A	19980519	US 95577922	A	19951222	199827	
KR 97056189	A	19970731	KR 9648178	A	19961025	199912	
TW 356628	A	19990421	TW 96105481	A	19960509	199936	
AU 713597	B	19991209	AU 9670430	A	19961025	200009	
MX 204137	B	20010910	MX 966091	A	19961204	200239	
CN 1155799	A	19970730	CN 96119984	A	19960919	200375	

Priority Applications (No Type Date): US 95577922 A 19951222
Cited Patents: No-SR.Pub
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 781003	A2	E	13	H04L-009/32	
Designated States (Regional): BE CH DE DK ES FR GB IE IT LI NL SE					
AU 9670430	A			H04L-009/32	
NO 9603626	A			H04L-009/14	
JP 9200199	A		11	H04L-009/32	
CA 2184946	A			H04L-009/32	
MX 9606091	A1			G09C-001/00	
US 5754659	A			H04L-009/30	
KR 97056189	A			H04L-009/32	
TW 356628	A			H04L-009/32	
AU 713597	B			H04L-009/32	Previous Publ. patent AU 9670430
MX 204137	B			G09C-001/00	
CN 1155799	A			H04L-009/00	

Abstract (Basic): EP 781003 A

The method involves hashing information from each group to produce a **separate hash** key for each group. Each hash key authenticates the information in its respective group. Combinations of the hash keys are combined together to produce one combined hash key.

The digital signature is derived from one combined hash key. The hashing comprises a bi-directional cryptographic processing, and a trap door one way function. The digital signature can be produced by hashing two or more combined hash keys together.

USE/ADVANTAGE - For generating cryptographic signatures. Provides more efficient hashing and authentication scheme, where category is minimally burdened by hashing of information blocks for other categories, and each category need only receive message information for itself, not other categories.

Dwg.2/4

Title Terms: DIGITAL; SIGNATURE; GENERATE; METHOD; AUTHENTICITY; GROUP; INFORMATION; HASH; INFORMATION; GROUP; PRODUCE; SEPARATE; HASH; KEY; GROUP; KEY; AUTHENTICITY; INFORMATION; RESPECTIVE; GROUP; COMBINATION; KEY; PRODUCE; ONE; COMBINATION; HASH; KEY; DERIVATIVE; DIGITAL; SIGNATURE ; COMBINATION; KEY

Derwent Class: P85; W01; [redacted]2
International Patent Class (Main): G09C-001/00; H04L-009/00; H04L-009/14; H04L-009/30; H04L-009/32
International Patent Class (Additional): H04B-007/15; H04L-005/14; H04N-007/173
File Segment: EPI; EngPI

8/5/1 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO

04020637 **Image available**
DATA RETRIEVAL SYSTEM USING HASH METHOD

PUB. NO.: 05-012337 [JP 5012337 A]
PUBLISHED: January 22, 1993 (19930122)
INVENTOR(s): UEDA TOSHIHARU
APPLICANT(s): OKI ELECTRIC IND CO LTD [000029] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 03-161367 [JP 91161367]
FILED: July 02, 1991 (19910702)
INTL CLASS: [5] G06F-015/40
JAPIO CLASS: 45.4 (INFORMATION PROCESSING -- Computer Applications)
JOURNAL: Section: P, Section No. 1547, Vol. 17, No. 280, Pg. 87, May 28, 1993 (19930528)

ABSTRACT

PURPOSE: To eliminate the **partiality** of a retrieval time due to the **partiality** of the number of retrieval data in a subordinate group as to data retrieval using the hash method.

CONSTITUTION: All retrieval data are classified in subordinate groups by 1st hash arithmetic 1b in advance, and the respective subordinate groups are classified by **2nd hash** arithmetic 1c into small subordinate groups, which are stored in a retrieval memory 4b. At the time of the data retrieval, computing elements 1b and processes retrieval data y2 by 1st hash arithmetic and **2nd hash** arithmetic to generate classification data o2 and o3, which are used to specify the head addresses of the small subordinate groups stored in the retrieval memory 4b by an address converter 2b, an adder 7b, and a selector 8b; and data in the subordinate groups are read out in order from the head addresses and **compared** by a **comparator** 5b with the retrieval key data y2.

8/5/3 (Item 3 from file: 347)
DIALOG(R)File 347:JAPIO

02654625 **Image available**
DATA PROCESSOR

PUB. NO.: 63-271525 [JP 63271525 A]
PUBLISHED: November 09, 1988 (19881109)
INVENTOR(s): TSUCHIDA MASASHI
SATO KAZUHIRO
OMACHI KAZUHIKO
YAMAMOTO AKIRA
OSONE TADASHI
FUKUSHIMA SHINICHI
YAMASHITA YOSHIAKI
APPLICANT(s): HITACHI LTD [000510] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 62-104245 [JP 87104245]
FILED: April 30, 1987 (19870430)
INTL CLASS: [4] G06F-007/28
JAPIO CLASS: 45.1 (INFORMATION PROCESSING -- Arithmetic Sequence Units); 45.2 (INFORMATION PROCESSING -- Memory Units)
JOURNAL: Section: P, Section No. 836, Vol. 13, No. 89, Pg. 89, March 02, 1989 (19890302)

ABSTRACT

PURPOSE: To decrease the number of times of checking on a main storage and to perform **join** processing at relatively low cost by performing **matching** operation by using **plural hash** functions and the applying **plural hash** functions.

CONSTITUTION: One hash function (BMH) is applied to a keyword string to generate HBM 170 in synchronism with the data transfer of the keyword string from a secondary storage device, etc., and at the same time, the other hash function (HPH) is applied to this keyword string to generate HPM 180. Then the BMH is applied to a **search** key string in synchronism with the data transfer of the **search** key string to a result, which is **compared** with the HBM; and the HPH is applied to the **search** key string to obtain TPM, which is **compared** to perform **search** processing. Consequently, processing for checking whether or not the keyword string contains respective data of the **search** key string is realized by said processing. Consequently, a great decrease in channel load is made.